Graham Forrester - Curriculum Vitae

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Summary

I am a marine ecologist and conservation biologist with 26 years of research, teaching, and outreach experience. Recent research includes study of fish ecology on coral reefs, coral restoration, social-ecological systems, and long-term coral reef declines.

Positions held:

2007 onward	Professor, Department of Natural Resources Science, Univ. of Rhode Island.
2002-2007	Associate Professor, Department of Natural Resources Science, Univ. of Rhode Island.
1999-2002	Assistant Professor, Department of Biological Sciences, Univ. of Rhode Island.
1995-1999	Assistant Professor, Department of Biology, University of California Los Angeles.
1993-1995	Postdoctoral Associate, Coastal Toxicology Program and Dept. of Biological Sciences, Univ. of California Santa Barbara.

Education:

1992	Ph. D	Zoology, University of New Hampshire, U. S. A.
1988	M. Sc.	Zoology, University of Sydney, Australia.
1985	B. Sc.	Zoology (with Honours), University of Wales, United Kingdom.

Peer-reviewed research articles (since 2003):

Finley, R. J. and G. E. Forrester. 2003. Impact of ectoparasites on the demography of a small reef fish. **Marine Ecology progress Series** 248:305-309.

Forrester, G. E., B. I. Fredericks, D. Gerdeman, B. Evans, M. A. Steele, K. Zayed, L. Schweitzer, I. H. Suffet, R. R. Vance, and R. F. Ambrose. 2003. Growth of estuarine fish is associated with the combined concentration of sediment contaminants and shows no adaptation or acclimation to past conditions. **Marine Environmental Research** 56:423-432.

Swearer, S. E., G. E. Forrester, M. A. Steele, A. J. Brooks and D. W. Lea. 2003. Spatio-temporal and interspecific variation in otolith trace-elemental fingerprints in a temperate estuarine fish assemblage. **Estuarine, Coastal and Shelf Science** 56:1111-1123.

Forrester, G. E. and M. A. Steele. 2004. A Shortage of structural refuges from predation causes density-dependent prey mortality at multiple spatial scales. **Ecology** 85:1332-1342.

Steele, M. A. and G. E. Forrester. 2005. Small-scale field experiments accurately scale up to predict density dependence in reef fish populations at large scales. **Proceedings of the National Academy of the USA** 102:13513–13516

Forrester, G. E. 2005. A field experiment testing for correspondence between trace elements in otoliths and in the environment, and for evidence of adaptation to prior habitats. **Estuaries** 28:974-981.

Forrester, G. E., B. Evans, M. A. Steele and R. R. Vance. 2006. Assessing the magnitude of intra- and interspecific competition in two coral-reef fishes. **Oecologia** 148:632-640.

Forrester, G. E. and R. J. Finley. 2006. Parasitism and a shortage of refuges jointly mediate the strength of density dependence in a reef fish. **Ecology** 87:1110-1115.

Tallman, J. C. and G. E. Forrester. Oyster grow-out cages function as artificial reefs for temperate fishes. Accepted, **Transactions of the American Fisheries Society**.

Forrester, G. E., M. A. Steele, J. F. Samhouri, R. R. Vance. 2008. Settling larvae of a small coral reef fish discriminate reef features at large, but not small, spatial scales. **Limnology & Oceanography** 53:1956-62

Forrester, G. E., M. A. Steele, J. F. Samhouri, B. Evans, R. R. Vance. 2008. Spatial density dependence scales up but does not produce temporal density dependence in a reef fish. Ecology 89:2980-85.

Paddack, M. J., J. D. Reynolds, C. Aguilar, R. S. Appeldoorn, J. Beets, E. W. Burkett, P. M. Chittaro, K. Clarke, R. Esteves, A. C. Fonseca, G. E. Forrester, A. M. Friedlander, J. Garcia-Sais, G. Gonzalez-Sanson, L. K. B. Jordan, D. B. McClellan, M. W. Miller, P. P. Molloy, P. J. Mumby, I.

Nagelkerken, M. Nemeth, R. Navas-Camacho, J. Pitt, N. V. C. Polunin, M. C. Reyes-Nivia, D. R. Robertson, A. Rodriguez-Ramirez, E. Salas, S. R. Smith, R. E. Spieler, M. A. Steele, I. D. Williams, C. L. Wormald, A. R. Watkinson, and I. M. Cote. 2009. Recent Region-wide Declines in Caribbean Reef Fish Abundance. **Current Biology** 19:590-595.

Samhouri, J. F., M. A. Steele, and G. E. Forrester. 2009. Inter-cohort competition drives density dependence and selective mortality in a marine fish. **Ecology** 90:1009-1020.

Samhouri, J. F., R. R. Vance, G. E. Forrester, and M. A. Steele. 2009. Musical chairs mortality functions: density-dependent deaths caused by competition for unguarded refuges. **Oecologia** 160:257-265.

Dalton, T., Pollnac, R., Forrester, G. E. and S. Smith. 2009. Governance Factors Affecting the Ecological Performance of Marine Reserves in the Wider Caribbean. **Proceedings of the Gulf and Caribbean Fisheries Institute** 62:319-322.

Pollnac, R, P. Christie, J. E. Cinner, T. Dalton, T. Daw, G. E. Forrester, N. A.J. Graham, and T. R. McClanahan. 2010. Marine reserves as linked social-ecological systems. Proceedings of the National Academy of the USA 107:18262-18265.

Vance, R.R.; Steele, M.A. and G. E. Forrester. 2010. Using an individual-based model to quantify scale transition in demographic rate functions: Deaths in a coral reef fish. **Ecological Modelling** 221:1907-1921.

Dalton, T.D., G. E. Forrester and R. P. Pollnac. 2010. Formal Co-management Arrangements and MPA Success in the Wider Caribbean. **Proceedings of the Gulf and Caribbean Fisheries Institute** 63: 289-293.

Forrester, G.E., L. Harmon, J. Helyer, W. Holden and R. Karis. 2011. Experimental evidence for density-dependent reproductive output in a coral reef fish. **Population Ecology** 53:155-163.

Forrester, G. E., C. O'Connell-Rodwell, P. Baily, L. Forrester, S. Giovannini, L.Harmon, R. Karis, J. Krumholz, T. Rodwell, and L. Jarecki. 2011. Evaluating methods for transplanting endangered Elkhorn corals in the Virgin Islands. **Restoration Ecology** 19:299-306.

Dalton, T., G. E. Forrester and R. Pollnac. 2012. Participation, Process Quality, and Performance of Marine Protected Areas in the Wider Caribbean. **Environmental Management** 49:1224–1237

Forrester, G. E., A. Maynard, S. Schofield and K. Taylor. 2012. Evaluating causes of transplanting stress in fragments of *Acropora palmata* used for coral reef restoration. **Bulletin of Marine Science** 88:1099-1113.

Forrester, G. E., K. Taylor, S. Schofield and A. Maynard. 2012. Colony growth of corals transplanted for restoration depends on their site of origin and environmental factors. Marine Ecology. DOI: 10.1111/maec.12000.

Wormald, C.L., M. A. Steele and G. E. Forrester. 2013. High population density enhances recruitment and survival in a harvested coral reef fish. **Ecological Applications** 23:365-373.

Forrester, G. E., R. P. Dauksis and M. A. Ferguson. 2013. Should coral fragments collected for restoration be subdivided to create more, smaller pieces for transplanting? **Ecological Restoration** 31:4-7.

Forrester, G. E., M. A. Ferguson, C. E. O'Connell-Rodwell and L. L. Jarecki. 2013. Long-term survival and colony growth of *Acropora palmata* fragments transplanted by volunteers for restoration. **Aquatic Conservation** DOI: 10.1002/aqc.2374.

Merolla. S. A., A. J. Holevoet, S. L. Musser and G. E. Forrester. 2013. Caribbean Damselfish Recolonize Reefs Following Coral Restoration. **Ecological Restoration**. 31:353-356.

Major reports and peer-reviewed book chapters (since 2003):

Carr, M. H., M. V. McGinnis and G. E. Forrester. 2003. Consequences of Alternative Decommissioning Options To Reef Fish Assemblages and Implications for Decommissioning Policy. Final technical report. U.S. Department of the Interior, Minerals Management Service, Pacific OCS Region, 94 pages.

Forrester, G. E., and M. A. Steele, 2013. Reef fishes: density dependence and equilibrium in populations? Pages 1-20 in The Balance of Nature and Human Impact, ed. K. Rohde, publ. Cambridge University Press.

Forrester, G. E. 2014. Coral Reef: Biology and History. In Encyclopedia of Natural Resources, ed. Y. Q. Wang, publ. Taylor and Francis.

Forrester, G. E. 2014. Coral Reef: Ecology and Conservation. In Encyclopedia of Natural Resources, ed. Y. Q. Wang, publ. Taylor and Francis.

Forrester, G. E., 2014. Competition. In, Ecology of fishes on coral reefs, ed. C. Mora, publ. University of Hawaii Press.

Jackson, J. B. C., G. Forrester and 29 others. 2014. Overview and synthesis for the wider Caribbean region. Pages 18-111 in Status and Trends of Caribbean Coral Reefs: 1970-2012, publ. IUCN Global Coral Reef Monitoring Network, Washington DC.

External Research Grants (since 2003):

2013	**J. A. Woollam Foundation** "Comparative analysis of volunteer and professional coral reef monitoring", $5,000.
2012-2013	**Champlin Foundation**, "Scientific Diving as a Tool for Education, Research, and Outreach", $120,538 (co-PI with A. Watson and R. Mather).
2012-2015	**NOAA Sea Grant**, "An interdisciplinary evaluation of the fishery for *Cittarium pica*", $134,030 (co-PI with C. Garcia-Quijano).
2006-2010	**National Science Foundation Human and Social Dynamics Competition**, "Understanding linkages among governance factors of linked social and ecological systems", $650,000 (co- PI with T. Dalton, R. Pollnac and P. Rubinoff).
1992-2014	**The Falconwood Foundation**, "Long-term research in coral reef ecology", $815,000 (mostly in direct support, accommodation, facility and boat use).
2004-2005	**NOAA NorthWest Fisheries Science Center IPA award**. "Ecosystem fisheries management and marine protected areas", $37,108.
2003-2006	**NSF Division of Biological Sciences multi-user equipment and instrumentation resources for Biology program**, "A water flume for studies of organismal interactions in flowing water", $72,986 (co-PI with C. Wilga and E. Carrington).
2003-2005	**RI Sea Grant Aquaculture Initiative**, "Habitat Value of Shellfish Aquaculture Gear", $100,020 (co-PI R. Rheault).
2003-2006	**USDA Rhode Island Agriculture Experiment Station**, "Assessing the value of shellfish aquaculture gear as fish habitat", $52,000.
2002-2007	**NSF Biological Oceanography Program**, "A test for shelter limitation of reef fish populations at large spatial scales: an integrated empirical and theoretical approach", (Co-PI M. Steele) $549,167.
2002-2004	**NOAA National Undersea Research Program**, "Source-sink dynamics, density dependence, and the efficacy of marine protected areas", (Co-PI M. Steele) $81,222 & approx. $110,000 in direct support (accommodation, facility and boat use).